DOCUMENT RESUME

ED 465 094 CE 083 375

AUTHOR Rosenbaum, James E.

TITLE Beyond Empty Promises: Policies To Improve Transitions into College and Jobs.

SPONS AGENCY Office of Vocational and Adult Education (ED), Washington, DC.

PUB DATE 2002-04-00

NOTE 42p.; Paper commissioned for "Preparing America's Future: The High School Symposium" (Washington, DC, April 4, 2002).

CONTRACT ED-99-CO-0160

AVAILABLE FROM For full text: http://www.ed.gov/offices/OVAE/HS/rosenbaum.doc.

PUB TYPE Information Analyses (070) -- Speeches/Meeting Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.

DESCRIPTORS Adjustment (to Environment); *Articulation (Education); Career Awareness; *Career Education; *Career Guidance; Economic Climate; *Education Work Relationship; Educational Improvement; Educational Needs; Educational Policy; Educational Practices; Educational Research; Employment Potential; Equal Education; Guidelines; High Schools; Higher Education; *Information Dissemination; Information Needs; Labor Market; Literature Reviews; Needs Assessment; Performance Factors; Policy Formation; Position Papers; Student Attitudes; Success; Teacher Attitudes; Tech Prep; *Transitional Programs; Vocational Education

ABSTRACT

Research indicates that the "college for all" policies encouraged by well-intentioned but misguided educators are preventing many students from getting crucial information about how they are doing, seeing the full range of their desirable options, assessing the appropriateness and likely outcomes of available options, and identifying actions that can improve their career outcomes. Educators and students must be made to understand that "college for all" policies stem from popular misconceptions about the desirability of college for everyone and the undesirability of jobs after high school. Educators and students must also understand that changing economic and labor market conditions have led to new rules of college and the labor market (skill demands have increased dramatically, earnings for those with less education have declined, college is more available, and community colleges have open admissions). It is particularly important to realize that students can improve their chances for getting good jobs by having better academic achievement and better noncognitive behaviors, taking vocational courses, getting job placement help from teachers, and working to improve their employment prospects before leaving high school. New policy actions to give students and educators better information and help students make more effective career plans must provide specific guidelines about selecting specific college and labor market options, useful evaluations in the form of tests and ratings, and trusted communication channels that provide authoritative information. (Contains 72 references.) (MN)

Reproductions supplied by EDRS are the best that can be made from the original document.

ED 465 094

Beyond Empty Promises: Policies to Improve Transitions into College and Jobs

James E. Rosenbaum

Northwestern University

April 2002

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE

This paper was prepared for the Office of Vocational and Adult Education, U.S. Department of Education pursuant to contract no. ED-99-CO-0160. The findings and opinions expressed in this paper do not necessarily reflect the position or policies of the U.S. Department of Education.

CE083375

Beyond Empty Promises: Policies to Improve Transitions into College and Jobs

James E. Rosenbaum

Introduction

Innovation occurs in the U.S. at an amazing speed, but people and institutions often have difficulty keeping up. In the past two decades, jobs and colleges have dramatically changed their requirements, but these changes are often poorly understood, and the resulting misconceptions have led to misguided educational practices. Reviewing research evidence, we conclude that well- intentioned educators have encouraged misguided "college for all" policies which prevent students from 1)getting crucial information about how they are doing, 2)seeing the full range of their desirable options, 3)assessing the appropriateness of these options and their likely outcomes, and 4)seeing what actions they can take to improve their career outcomes.

"College for all" policies create serious information failures. This paper recommends policies to give students and educators better information and to help students make more effective career plans. These new policy actions provide three components.

1) Provide guidelines -- information about college and the labor market which tells students about desirable career options and steps they can take to get them.
2) Provide useful evaluations-- tests and ratings that provide usable information to students, employers, and colleges about students' strengths on diverse valued dimensions.
3) Provide trusted communication channels-- channels that provide authoritative information about students' positive qualities to employers and colleges, and provide authoritative information about college and labor market demands to students.

High schools have a broader mission than college preparation, or even academic preparation. As the last societal institution attended by all youths, high schools must prepare all young people for productive careers. If they fail, youths will have difficulty becoming self-sufficient adults, and in fact, many youths spend 2-10 years floundering among many dead-end high turnover jobs, with many unemployment spells and strong enticements for criminal activity. Students must begin to assess what

they've accomplished and their likely career options, while they are still in high school where they can take steps to prepare for realistic options. Instead, high schools encourage nearly all students to have college plans, even when such plans are unrealistic. Although less than 42% of high school graduates get college degrees and many drop out of college with no credits, high schools encourage all students to expect college degrees, even students with poor grades, of whom only 14 percent will get any degree. Such advice often encourages complacency, lack of effort, and misdirected efforts. We propose policies to encourage high schools to provide information, useful student evaluations, and help in attaining multiple options. These policies include college plans, but they also include other desirable options that make it less likely that students will face dead-end jobs or unemployment.

After identifying 12 misconceptions that arise because of poor information, this paper describes some specific procedures for providing needed information, usable evaluations, and more trusted communication channels. These policies require new information and new models for interaction among high schools, employers and colleges. The federal government can provide new information and models to help schools, employers, and colleges understand and respond to the new rules of college and the labor market.

Three Revolutionary Changes: The New Rules of College and the Labor Market.

Youths have always had difficulty entering adult society, but the process has become more difficult in recent decades. Over the last 40 years, three revolutionary changes have dramatically changed the way students become adults. First, the labor market has dramatically increased its skill demands and the earnings advantages for college graduates, while reducing the real earnings for those with less education.

Second, college became much more available, and community colleges (a minor factor in the prior generation) radically increased in enrollment. Over the past 40 years, while enrollment at four-year colleges doubled, enrollment at community colleges increased 5-fold (Digest of Educational Statistics, 1999).

The third revolution was perhaps the most remarkable. Community colleges undertook a revolutionary policy of open admissions. Unlike most four-year colleges, community colleges opened their doors to admit all interested students regardless of their prior academic achievement. Any high school graduate could attend, even with barely passing grades. Sometimes students do not even have to be high school graduates or have GEDs.

These three revolutionarily changed the rules of college and the labor market. They give students dramatically new opportunities. However, as with all

revolutions, such dramatic changes are difficult to understand, and they have lead to misconceptions and unintended consequences.

The College-For-All Policy: Misconceptions About the New Rules of College and the Labor Market.

Dramatic changes are hard to understand, and educators have formed mistaken beliefs and pursued misguided practices. Without any public decision, American high schools have quietly adopted a new informal policy, what I've called the "college-for-all" policy (Rosenbaum, 2001). This new policy is based on misconceptions about the new reality of college and the labor market. Before proposing solutions, we must consider the misconceptions that have led to the current college-for-all policy. The following sections present 12 misconceptions and research evidence about these misconceptions. This paper then recommends policy actions to improve the ways high schools interact and communicate with students, colleges and employers in ways that help all parties.

Misconceptions About the Desirability of College for Everyone

The first six misconceptions are about the desirability of college for everyone, and the remaining six are about the undesirability of jobs for high school graduates.

MISCONCEPTION 1: Counselors should advise all students to attend college. Guidance counselors have traditionally been the school staff responsible for advising students' educational plans. Counselors used to be gatekeepers; if students were unprepared for college, counselors advised them to plan other careers (Cicourel and Kitsuse, 1963; Rosenbaum, 1976). The increased skill demands of the labor market, the vast expansion of higher education, and new open admissions policies have given the impression that all students should attend college

Recent studies indicate that guidance counselors' practices have changed. Counselors rarely discourage college plans or suggest alternatives. A recent study in eight diverse urban and suburban high schools found that guidance counselors do not discourage students from attending college, even if students have poor achievement, and they do not warn students if they have poor chances of success in college (Krei & Rosenbaum, 2001; Rosenbaum, Miller, & Krei, 1997). Although some counselors express misgivings about their college-for-all advice and believe that some of these students have little likelihood of lasting in college more than a few months, they believe that open admissions means that they no longer have to restrict college access, and they are happy to be free of that unpleasant task. Such attitudes were rarely evident in the studies of counselors prior to 1980.

National data suggest that these practices are widespread. While only 32 percent of a national survey of seniors in 1982 said that their counselors urged them to go to college, ten years later, twice as many seniors (66 percent) made the same statement (comparing HSB with NELS respondents). Indeed, 57 percent of seniors in the bottom half of the academic rankings reported that counselors urged them to attend college (Gray, 1996; Boesel, 2001).

Despite popular concerns about counselors being too restrictive, the opposite may be happening now. Counselors who wish to warn students that they are unprepared for college feel that they lack authority to do so (Rosenbaum, Miller, & Krei, 1997). They report that when they warn students that they are unprepared for college, parents complain, and principals support the parents. Many counselors believe that they do not have authority to give such advice. In the words of one counselor, "Who am I to burst their bubble?"

Of course, if counselors lack authority to warn students, no one else in high school is likely to do it. Despite their doubts about encouraging unprepared students to attend college, counselors lack any information or guidelines that would authorize them to warn students, and they face strong pressures to encourage all students to have college expectations. Counselors also lack information about desirable career alternatives to college.

MISCONCEPTION 2: All students should plan to get college degrees. The "college-for-all" policy has had an impact across the nation. The 1992 National Education Longitudinal Survey (NELS: 92) found that 84% of high-school seniors planned to get a two- or four-year college degree. Even many students with bad grades, low-test scores, and poor high-school attendance planned to complete a college degree.

However, many of these students will be disappointed. Although 84% of high-school seniors expect a degree, only 41.3% of high-school graduates age 30–34 actually have college degrees (Digest of Educational Statistics, 1999). Similarly, a national study, the High School and Beyond (HSB) survey, followed high-school seniors 10 years after graduation. It found that of seniors who planned to get a college degree, only 37.7% actually completed a degree in the ten years following graduation. For seniors with poor high-school grades who planned college degrees, less than 14% completed a degree (Rosenbaum, 1998, 2001). For this 14%, open admissions provided an extremely helpful second chance.

However, for the other 86% of students, their second chance was only another failure experience. It is hard to argue that these students should count on getting a

college degree. Students who graduate from high school with low achievement can have college plans, but, at a minimum, they need to be informed of the high risk of college dropout, informed of how hard they must work to overcome these odds, and informed of other desirable options. If they were so informed, they might revise their plans, or they might increase their efforts while still in high school.

MISCONCEPTION 3: Students with college plans do not need to prepare for work. To avoid discouraging students, educators have removed alternatives. Since 95% of students plan to attend college, and 84% expect degrees, educators now feel that it is unnecessary to prepare young people for work. Since about 1990, the past two superintendents of the Chicago public schools declared a commitment to getting all graduates into college, and they systematically reduced vocational programs. Similar reductions were seen in high schools in six different suburbs (Rosenbaum, 2001). There are reports of similar policies across the U.S. Vocational enrollments in the U.S. have declined substantially over the past two decades (NCES, 2000,p.7), but it is hard to know how much of the decline in student preferences has been affected by schools' college-for-all advising and declines in vocational offerings.

In fact, many "college-bound students" are really work-bound. As noted, many students who plan college degrees are almost certain to drop out of college. Although they have college plans, such students are really work-bound. They will enter the labor market with a high-school diploma as their highest degree, although they have not planned or prepared for this. Indeed, about 31.1% of college entrants get no college credits, and 52.4% of students with poor high-school grades (Cs or lower) get zero credits (Rosenbaum, 2001, p. 77). Students who have zero credits surely get no benefit from the college-for-all approach, and they would have had better outcomes from obtaining other plans and preparation (see below).

MISCONCEPTION 4: Open admissions allow all students to enter college classes. Open admissions allow all students to enter college, but that does not mean that they can take college classes. Many "college students" are not really in college. Community colleges admit all interested students, but many students are not prepared for college courses, and they are placed in remedial courses—high-school level courses that confer no college credits (Deil-Amen & Rosenbaum, 2002b).

Many high school graduates lack basic ninth grade academic skills (Murnane and Levy, 1996, p. 34), and many students with low achievement are planning to get college degrees (Rosenbaum, 1998; Boesel and Fredland, 1999). Community college administrators report that many of their students must take basic reading and arithmetic courses at an 8th grade level (Deil-Amen and Rosenbaum, 2002). These "college students" are taking 8th grade courses, and they may have to cover several years of high school curricula for which they will not receive college credits.

The best national estimate of the extent of remedial education comes from a careful analysis of college transcripts of a national survey of students from the class of 1982. It finds that when they enter college, about 46% of students are in remedial courses, and among those entering community colleges, 64% are in remedial courses (Adelman, 1985). Similar percentages are evident in the prior decade, for the class of 1972. Another national survey finds that many students take three or more remedial courses, which doubles the chances of dropping out (Deil-Amen & Rosenbaum, 2002b). Moreover, in an effort to reduce students' feelings of inferiority, college advisers often downplay that courses are remedial and give no college credit. Even after entering college, many students are unclear about requirements and do not realize they are in remedial courses (Deil-Amen & Rosenbaum, 2002b). This has two implications. First, students' reports of the incidence of remedial course taking in national surveys are likely to be underestimates. Second, many students do not realize that they are not earning college credits for remedial courses, and their plans for two-year or four-year degrees cannot be achieved in the time they have scheduled, particularly if they are taking several remedial courses.

MISCONCEPTION 5: College plans lead to increased school effort. It is often assumed that college plans make students more motivated, giving students a reason to work in high school. Unfortunately, that does not happen for many students. For many decades, work-bound students have believed that high school achievement will not influence their future careers (Stinchcombe, 1965), but now many college-bound students also hold this belief. In a survey of over 2000 seniors in 12 urban and suburban high schools, we found that almost 40% of college-bound students believe that school effort has little relevance for their future careers (Rosenbaum, 1998, cf. also Steinberg, 1996). Since anyone can enter college no matter how badly they do in high school (because of open admissions), they believe they can wait until college to exert effort.

Not surprisingly, students who hold this belief exert much less effort in high school, even after controlling for student attributes and other student beliefs (Rosenbaum, 2001, p. 63). Students seem remarkably complacent that they have the ability to be successful whenever they decide to get serious about school, a confidence which is at odds with the actual degree completion rates of similar students in national samples. Unfortunately, college plans do not lead to increased school effort. Many students who plan to get college degrees exert very little effort in high school.

MISCONCEPTION 6: High schools should focus on academic preparation, instead of warning students about their college prospects or providing other career options. Since students' college plans are often inconsistent with their preparation, either their plans must be reduced or their preparation increased. The usual response is to urge schools to redouble their efforts to improve students' achievement. This seems to be a noble and uncontroversial goal.

However, by high school, higher achievement has been schools' goal for ten years, yet many students are 2, 3, or more years below grade level in achievement (NAEP, 1999; Murnane and Levy, 1996, p. 34). Educators should not give up on academics, but they cannot count on large numbers of students who have fallen several years below grade level after ten years of school to close that gap in the last two years of high school, even if schools make large new efforts. Indeed, improved academic instruction would probably be better directed at the early years of elementary schools since the gap tends to grow over the school career, and early prevention is probably easier than fixing the problem after it has become severe (Farkas, 1996).

Our failure to warn students has had an unintended consequence. Although many high school students are several grade levels behind in academic skills, they still believe they can get college degrees without increasing their efforts. Many low-achieving seniors have college plans, but are doing little or no homework; they are not taking efforts to improve their future prospects (Rosenbaum, 2001). Teachers are urged to push students harder, but many teachers believe that students will not do the assignments (Sedlak, et al, 1986), because students have after-school jobs (Steinberg, 1996), and because parents complain about homework (Bishop 1996).

While high schools should continue trying to improve students' academic achievement, that is not an excuse for withholding information about students' likely college prospects. The college-for-all policy gives students the mistaken impression that low high school achievement is not an obstacle to their plans. That is exactly the wrong message if we want to raise students' achievement.

Misconceptions About the Undesirability of Jobs After High School.

As the last institution that nearly all members of society attend, high schools have the obligation to prepare young people to become productive, self-sufficient members of society. Open admissions community colleges already guarantee that the college option will remain open, but that doesn't mean that college is necessarily one's best choice. High schools must provide students with multiple options, in case college doesn't work out.

Unfortunately, misconceptions have arisen about how to do this. Changes in the labor market have lead to six misconceptions about the jobs students can get after high school and whether high school can help students get good jobs.

MISCONCEPTION 7: All good jobs require a college degree. Although the labor market requires higher skills than formerly, many good jobs do not require college skills. There has been a large increase in the need for strong *high-school* level skills:

math, reading, and writing skills at a 9th grade level. Examining good jobs at several kinds of employers, Murnane and Levy (1996, p.33) found that many good jobs require the ability to do math at a 9th grade level, the "ability to manipulate fractions and decimals and to interpret line graphs and bar graphs.... [Reading skills to] find, understand, summarize, and explain relatively complicated information." The problem is that even in 12th grade, over 40% of high-school students lack these ninth-grade academic skills in math and 60% lack these skills in reading (*Ibid.*, p.34). We need to improve youths' skills, but the skills that are needed can be provided in high school. Students do not need to learn these skills in college.

When asked what jobs they recommend to students who seek jobs after high school, counselors report that they either give no advice about jobs, or they advise students to take jobs in fast food or small retail shops, jobs which have no career advancement opportunity (Rosenbaum, 2001). Counselors believe that young people cannot get good jobs without college degrees. However, when asked the same question, vocational teachers report that many good jobs are available to high school graduates (Krei and Rosenbaum, 2002). Jobs that lead to well-paid careers exist in a wide variety of fields, including construction, trades, clerical and administrative support, technical specialties, printing, graphics, financial services, and social services. Unfortunately, few guidance counselors know about such jobs and their requirements, counselors are too busy with other duties to give job advice, and high schools do not assign career advising to any staff (Rosenbaum, 2001).

MISCONCEPTION 8: High school achievement is irrelevant to job outcomes. Many high school teachers believe that academic achievement is not important for students' employment or earnings (Useem, 1986). As noted, counselors advise students to take jobs in fast food or small retail shops, but, since many high school students already have such jobs, they might rightly infer that the diploma is irrelevant to job outcomes. The doubts about high school relevance to job outcomes are reflected in four related beliefs –

a. High school achievement is irrelevant to jobs,
b. Noncognitive behaviors in school are irrelevant to jobs,
c. Vocational programs are irrelevant to jobs, and
d. High school teachers cannot help students get better jobs.

All four are common beliefs, and all four are wrong. We shall address each.

The first belief, that high school achievement is irrelevant to job outcomes, is correct in the short term, but not in the long-term. In a large national survey, employers report that grades are important for hiring college graduates, but not for hiring high school graduates (Crain, 1984). Another study found that most employers do not even request high school transcripts, and even when employers consider school experience,

they do not necessarily focus on academics (Bills, 1988). In the 1997 National Employer Survey, employers asked to rank the relative importance of various potential criteria in the hiring process on a five point scale (from "essential" to "not at all important") put "tests and academic performance" near the bottom of all criteria (2.3 and 2.5), just above "teacher recommendations" (2.0), and far below "applicants' attitude" and "employer references" (4.6 and 3.9, respectively, Shapiro and Iannozzi, 1999, table 2). In a careful study of employers, John Bishop (1993, 343) notes that employers rarely make efforts to obtain valid information from schools. A study of hiring practices into entry-level, career-ladder jobs in diverse industries found that employers placed most emphasis on applicants' self-presentation in a brief interview, and little emphasis on grades, test scores, or teacher recommendations (unless they knew the teacher; Miller and Rosenbaum, 1997).

If we assess employers' needs by the wages paid for employee qualifications, employers do not seem to need any academic achievement from recent high school graduates. They neither offer higher pay nor have a greater propensity to hire based on academic achievement -- that is, grades, test scores, or teacher evaluations. Indeed, many studies indicate that high school grades and test scores do not predict a student's unemployment, occupational status, or earnings right after high school. (Bishop, 1993; Gamoran, 1994; Griffin, Kalleberg, and Alexander, 1981; Jencks et al., 1979; Stern, Finkelstein, Stone, Latting, & Dornsife, 1995). No wonder high school staff believes that academic achievement is not important for students' employment or earnings.

However, those studies only consider short-term outcomes, and high school achievement has strong effects on long-term outcomes. Although high-school grades and test scores have little relationship to short-term outcomes (college admissions or earnings right after high school), they strongly predict important long-term outcomes (Altonji and Pierret, 1995; Murnane, Willette, and Levy, 1995; Miller, 1998; Rosenbaum, DeLuca, Miller, & Roy, 1999). High-school grades predict students' ultimate educational attainment, and these relationships remain significant after many controls (Miller, 1998; Rosenbaum, 2001). In addition, high-school grades also strongly predict long-term earnings (even after we controlled for educational attainment). A rise of one letter grade (from C to B) was associated with a 12.8% earnings gain at age 28 for youths who get no college degrees (Rosenbaum, 2001, p. 182). Unfortunately, it is very difficult, if not impossible, for high school teachers or counselors to see what happens to most of their graduates nine years after high school, so they do not realize the long-term importance of high school achievement.

MISCONCEPTION 9: Noncognitive behaviors in high school are irrelevant to job outcomes. It is often assumed that the increased skill demands of the labor market mean that employers primarily need academic skills. However, while employers say they value academic skills, employers say their greatest needs are soft skills, e.g.,

work habits and social skills, which they consider far more important than academic skills (Shapiro and Iannozzi, 1999). In interviews we've conducted with 51 employers in a wide variety of fields, employers stress attendance, dependability, perseverance, attention to quality, and ability to work with others (Rosenbaum, 2001, chap. 6).

Moreover, soft skills are sometimes the best predictors of job performance. In an assessment of Diamond-Star Corporation's selection process, an outside personnel firm examined the correlation between employees' ratings during the hiring process and their later job performance as rated by supervisors. The study found that applicants had to have test scores over a fixed threshold, but the level of scores over that threshold had almost no relationship to job performance. By contrast, applicants' soft-skills ratings were better predictors of job performance (Murnane and Levy, 1996, p. 36, cf. also Houghton and Proscio, 2002).

In addition, analyses of the national HSB data indicate that students' earnings 9 years after graduating from high school are significantly affected by their noncognitive behaviors in high school -- their sociability, discipline, leadership, and attendance, even after controlling for background characteristics and academic achievement (Rosenbaum, 2001, ch. 8).

Moreover, youth must learn these behaviors before entering the labor market. While some employers provide training in academic or technical skills, they do not provide training in soft skills or work habits. If workers lack soft skills, if they are undependable, unmotivated, or get into conflicts, employers don't train them, they fire them. Employers report that they do not know how to train soft skills (Miller and Rosenbaum, 1997). Similarly, most job training programs focus on academic or job skills, and the few programs which try to teach motivation, find that it is difficult, expensive, and very time consuming (Herr, Wagner, and Halpern, 1996). If students don't learn soft skills before entering the labor market, they probably won't be given a chance to learn them later.

High school is the last institution all students attend, so it is the logical place for students to learn work habits, if they haven't done so already. Yet, as noted, many students believe that there is no reason to exert effort in high school. In the NELS survey, 31% of high school sophomores do one hour of homework a week or less (DeLuca and Rosenbaum, 2001).

Many employers report that some new workers are absent or late to work several days in their first week at the job, they do poor quality work, and they talk back to supervisors (Rosenbaum, 2001). Youths have learned that these behaviors are accepted in high school. Employers report that workers who were absent three days in the first week expected that their excuses would be accepted, so they are surprised

when employers fire them. Employers report that many young people go to considerable effort to travel to job interviews, but then they dress or act inappropriately. Young people arrive at a job interview bringing a crying baby or a girlfriend to read the job application, or they wear headphones, short skirts, torn jeans, or T-shirts with inappropriate slogans ("Fuck you," "Megadeth", Rosenbaum, 2001). These young people wanted the job, but they didn't know what employers expect. High schools are failing to develop soft skills, which employers value much more than academics, and which must be learned before entering the labor market.

MISCONCEPTION 10: Vocational education is irrelevant to job outcomes. Many studies find substantial employment benefits from vocational courses immediately after high school. For example, Campbell et al. (1986) found that vocational graduates in the 1983 national longitudinal survey were 8.2% more likely to be in the labor force than graduates of academic programs, and their pay was 5.6% higher, after controlling for test scores and enrollment in higher education. Another study found that male vocational graduates get 8% higher wages, work 10% more, and earned over 20% more in 1981, their first year after graduation than graduates of academic programs. The benefits were even greater for female vocational graduates (Kang and Bishop, 1986), not only for earnings but also for desirable occupations four years after high school (Arum and Shavit, 1995).

A comprehensive review of research on vocational education concludes "the strongest, most consistent finding throughout the literature [on vocational education] is that improved earnings do accrue in situations where vocational training is directly related to job tasks.... Students who concentrate in a single area of coursework have better economic outcomes than those who take courses in a variety of subjects...[but] only if work is in a related field" (Boesel, et al. 1994, vol. II, pp. 137-139). This means that vocational programs must offer skills in areas that are in demand in the labor market, and it may also mean that programs need to assist students in finding appropriate jobs, as noted later.

Just as cognitive psychology suggests that learning is more effective and more motivating if done in appropriate contexts (Berryman, 1992), some studies have found that some vocational courses contribute to academic achievement in mathematics (Wirt et al. 1989), and they may reduce dropout rates from high school (Boesel, et al. 1994, vol II, p. 121). Moreover, a recent study of a national survey (NLSY) found that females in vocational tracks have lower teen pregnancy rates than students in general or college tracks (Beattie, 2001). If, as theorists suggest, teen pregnancy results from poor future prospects (Wilson, 1996), one possible interpretation is that vocational programs give these young women hope for better future employment prospects. This interpretation is consistent with survey results that indicate that students who believe

that their teachers can help them get jobs see their classes as more relevant to their future lives than other students (Rosenbaum, 2001, p. 63).

In the era of "college for all" policy, vocational education has been criticized as preventing college attendance (Oakes, 1985). This belief is mistaken. Although students in vocational programs are less likely to attend college than other students, many students choose vocational programs because they do not wish to attend college. However, vocational programs do not preclude college enrollment. In 1980, 12.6 percent of vocational education graduates obtained a 1 or 2 year degree in the six years following graduation (Digest of Educational Statistics, 1991, table 289) and over 20% of vocational education graduates from business and health programs obtained college degrees. Indeed, 18 percent of students in distributive education programs and 15 percent in health programs attend four-year colleges. More recently, vocational student enrollment in college has increased: vocational students from the class of 1992 were much more likely to enroll in college after graduation than 1982 graduates were (NCES, 2000, p. x). Students in vocational and general tracks, who tend to be similar in academic and social background, differ very little in postsecondary outcomes, even though students choose general tracks (and sacrifice vocational preparation) because general tracks promise greater college preparation (Boesel, et al. 1994, vol. II, p. 125).

Vocational education has increasingly emphasized academics, and vocational students' academic preparation increased greatly between 1982 and 1994 (NCES, 2002, p. vii). An academic emphasis was an explicit goal of the federal School to Work Opportunities Act (STWOA) of 1994. An analysis of programs related to this act indicates that students in school-to-work programs are more likely to complete their high school diploma, to improve their attendance and grades, and to report having increased access to caring adults, enhanced motivation, better planning for the future, and broader career plans (including both college and work, Hughes, Bailey, and Mechur, 2001,p. 6). An assessment of long-term goals, including education and employment require longitudinal research that has not yet been done.

MISCONCEPTION 11: High school teachers cannot help students get better jobs. Unlike secondary schools in Germany and Japan, American high schools have no responsibilities for helping students get jobs after graduation. However, recent research has discovered that American high schools do help some students get jobs. Over eight percent of work-bound high-school graduates obtain their jobs after high school primarily through help by their schools (Rosenbaum, 2001, p. 200). High schools do not merely help students who are already favored in the labor market: females and minorities are significantly more likely to get school help than white males, and low-SES students are equally helped (after controlling for achievement). In addition, students who got jobs through school help had better career trajectories. Nine years after graduating, they had 17% higher earnings than students who got jobs

through direct applications (Rosenbaum, 2001, p. 208). This compares favorably with students who got jobs through relatives, who only had 8.6 percent higher earnings.

In addition, interviews with 110 high school vocational teachers find that many vocational teachers have developed strong contacts with employers and they use these contacts to help students to get jobs, as described below. Although these teachers' job placement efforts are not formal job duties and are not widely known, they provide important career benefits to some students.

MISCONCEPTION 12: Society can wait to address students' employability until after high school. The United States prides itself on offering second chances, and the open admissions policies at community colleges are a prime example. Community colleges open their doors to nearly all applicants.

However, some doors have already begun to close after students leave high school, and high school is the last time that many students have to fix problems before they are shut out of opportunities. As noted, community colleges give low-achieving students second chances to get a degree, but only a small proportion of students succeed in doing so. In addition, if students do not learn soft skills before entering the labor market, they probably won't be given a chance to learn them later. Employers are unwilling to teach soft skills (Rosenbaum, 2001, ch. 6), and many community colleges do not teach them (Deil-Amen and Rosenbaum, 2002a).

New welfare reform regulations also partially close another door. TANF recipients may only enroll full-time in postsecondary education for 12 months, after which they must engage in work activity. They may continue to participate part-time in postsecondary education, however. While 22 states have adopted policies that enable recipients to participate full-time in postsecondary education for longer than 12 months, two-year associates degrees are very difficult in the majority of states.

Moreover, poor preparation in high school can lead to a bad start, which can be harmful to later careers. If students get their start in dead-end jobs, if they have many periods of job turnover and unemployment, or if they wander into crime or drugs, these records may stigmatize their future employment prospects.

Even society's efforts to help youths may backfire. In a random assignment experiment, a job-training program that offered good training led to significantly lower earnings than a control group, presumably because it stigmatized participants as having poor employment histories (Bloom et al. 1992; Cave and Doolittle, 1991). The control group had the same employment problems, but they did not get the stigmatizing label.

Some doors begin closing after students leave high school, and students need to be warned and prepared with multiple options while they are still in high school. Waiting to provide the training after high school may be ineffective, or even harmful.

Although youths' problems in high school are easily dismissed as minor youth indiscretions, American society is not so unforgiving of problems that arise after high school, even in the next few years. Teen pregnancy, crime, unemployment, job turnover, and job training programs leave stigmas, which may have a lasting effect.

High school is the last time that many students have to fix problems before they confer a durable stigma. Warning students while they are in high school allows them to get preparation and help while it is still available and non-stigmatizing. Currently our policies wait to repair youths' employment prospects only after they start having problems in the labor market, by which time, the problems are often compounded by a poor employment record and stigma. Rather than waiting until youths have serious employment problems, policy would be more effective by preventing these problems in the first place. If they weren't caught up in college-for-all delusions, high schools could prevent such problems with job preparation and job placement assistance.

The New Rules for College and The Labor Market

These 12 conceptions are mistaken. There are rules that students and educators should know, but they probably don't. The new rules of college and the labor market can be summarized succinctly:

1) All students can attend college, but low-achieving students should be warned about remedial courses and their own likely prospects.

2) All students can plan to get a college degree, but, if they are unprepared, they must be willing to repeat high school courses in college, taking the extra time and effort in non-credit remedial courses, with higher risks of failure.

3) Even if students have college plans, they must still prepare for work. All career plans should include multiple options, particularly for students who have poor likelihood of completing college.

4) Open admissions allows all students to enter college, but not necessarily college credit classes.

5) College plans require increased school effort. If students delay their effort until they get to college, the delay will make degree completion take longer and be

less likely.

6) Policies to improve college preparation do not remove the need to provide information about students' college prospects or to provide multiple options

7) Many good jobs do not require a college degree, and high school graduates actually get such jobs.

Students can improve their chances of getting good jobs by 8)having better academic achievement, 9) having better noncognitive behaviors, 10) taking vocational courses, and 11) getting job placement help from teachers. 12) Students' employment prospects can best be improved before they leave high school.

New Policy Proposals

This review indicates an urgent need for policy action. As long as policymakers, practitioners, parents and students hold these misconceptions, they will make decisions that poorly meet their own needs, the needs of each other, and societal needs. The following sections advance proposals that would help students take actions that would make high schools more effective in helping students.

Effective policy proposals should provide three components.

A) Provide guidelines -- information about college and the labor market, which tells students about desirable options and steps, they can take to get them.

B) Provide useful evaluations-- tests and ratings that provide usable information to students, employers, and colleges about students' strengths on diverse valued dimensions.

C) Provide trusted communication channels-- channels that provide authoritative information about students' positive qualities to employers and colleges, and provide authoritative information about college and labor market demands to students.

While it cannot impose these policies, the federal government is the best source for devising and recommending models. Although local actors have a vital role in assessing local labor market requirements and responding quickly to change, they have great difficulties in perceiving systemic properties and in discerning long-term consequences. As a result, local policymakers, practitioners, and individuals have serious misconceptions, they view problems too narrowly, and they cannot see long-term outcomes of career choices. Local actors often get caught up in a blame game: employers and colleges blame high schools, and vice versa. Yet failures often result

from defects in the way these institutions interact and communicate, not from defects inside the institutions themselves. For instance, if employers and colleges do not effectively communicate their skill needs, students will not see incentives for high school effort, and they may be unresponsive to instruction, regardless of what teachers do.

The following policy proposals can improve communication of information about incentives and improve the transition. Local practitioners do not have time, resources, or expertise for doing the required multivariate longitudinal research on these questions. The U.S. Department of Education is in a good position to conduct such research and recommend models that will help local actors to formulate appropriate policies, programs, and practices.

Provide Guidelines

Guidelines can provide information about the new rules for gaining access to jobs and college. Instead of imposing proscriptive rules, guidelines inform students about their options and assist them in making choices among those options and in seeing steps they can take to improve their career outcomes. They can provide four kinds of information: desirable options, actual requirements, procedures for increasing access, and likely outcomes.

1. Inform students what options exist, including options that are not generally realized. This includes the many types of available jobs and colleges that are often overlooked, perhaps because their benefits appear in later years, not right after high school.

2. Inform students about the requirements for various options. This includes not only college entrance requirements, but also the requirements to succeed in various college programs. What types of effort, what levels of grades, and what other ratings are good signals of preparation for students' goals?

3. Inform students about procedures for increasing access to these options. What kinds of practical steps can students take in high school to improve their access to desirable careers. Some types of curriculum programs and some types of teacher help can assist students in obtaining a good job or in getting access to appropriate college programs.

4. Inform students about probable outcomes for various career options, given their personal achievements, both their strengths and weaknesses. If this information is provided early, it can stimulate students to make greater efforts. Later, it can guide students to select several desirable career options, at least some of which they have a high probability of attaining.

Guidelines include information about desirable options (desirable jobs, colleges, college programs) and information about their benefits, requirements, procedures for increasing access, and likely outcomes.

Information On Each Option—Benefits; Requirements; Procedures; Outcomes

Options—

a. Jobs
b. Colleges
c. College programs

College is Not the Only Option and Not the Best Option for Everyone.

Everyone can attend college, but it is not students' only option, and it may not be the best option for every student. If students face the prospect of an 86 percent failure rate, guidelines should warn and advise them to have several alternative plans, in case their college plans do not work out.

Although college-for-all advice occurs for the best of intentions, it is sometimes a cruel deception. It fails to warn students about their likelihood of dropping out of college, and it prevents students from considering other options and getting suitable preparation and job placement assistance while they are in high school. By the time students realize that college is not a viable option, they are out of high school, and they have nowhere to turn for help.

Guidelines stipulate information students should know when they make their plans. Although anyone can attend college, students should know that 1) good job options are available without a college degree, 2) some colleges with low entrance requirements have higher requirements for college credit, 3) different job seeking procedures and different college programs offer the same student different probabilities of success, 4) although they can enter college, low-achieving students have low probability of getting a degree, and it takes some students several terms of college to discover their poor chances. This information would help high school students prepare for colleges' real demands and make appropriate choices and multiple plans, but students and educators currently have misconceptions about these issues.

a. Job requirements, procedures, and outcomes. Although good jobs require increased skills, they do not necessarily require "college skills" (Murnane and Levy, 1996), and many desirable jobs are available to high school graduates

(Rosenbaum, 2001). Research indicates that students with better grades, attendance, discipline, sociability, and leadership in high school get significantly higher earnings nine years after graduating from high school. There are also procedures for getting these jobs: vocational programs and school job placement can lead to better earnings trajectories. These requirements and procedures are not stated, and students (and many counselors) do not realize this information.

Guidelines can provide information about these job options and procedures. They can encourage high schools to offer ratings of students' social skills and work habits, and tell students about the incentives for getting higher ratings. Guidelines can recommend that high schools provide time and incentives for vocational teachers to assist students with job placement, instead of only a few teachers doing this activity on their own time, as is now the practice. Although these options now exist, they are not widely recognized. Merely providing information and guidelines can help schools and students consider additional options.

b. College requirements, procedures, outcomes. Guidelines can provide information about the actual requirements for college credit courses, and can inform students about their realistic chances of getting some benefit from college. Such information will help students and schools consider additional options. In addition, guidelines can provide college applicants with details about procedures—how to prepare for college-level courses, how to know if a course offers college credits, how to assess how long will it take to complete a degree (given their remedial needs), how to assess what is the likely job outcome from a program and whether the college provides job placement assistance (Deil-Amen and Rosenbaum, 2001).

c. Types of colleges and college programs: requirements, procedures, and outcomes. Although high-achieving students have many college options, which are well described by counselors and college guidebooks, low-achieving students' options are poorly understood. Low-achieving students have many college options: they can attend public or private two-year colleges, and also some public or private four-year colleges. Within the same college, different programs are offered, and these programs often have very different properties: different requirements, completion rates, and outcomes. Since these colleges only serve local areas, no directories compare these various options, and some guidance counselors do not understand the differences among them. Despite the increased emphasis on college for all students, high schools have been remarkably silent about the variety of colleges and college programs that exist for low achieving students, the various requirements for entry and for completion, their degree completion rates, and their occupational outcomes

The differences are not trivial. For instance, community colleges offer several kinds of associate degrees. Students majoring in business or some technical fields could obtain an associates of science (AS), associate of arts (AA), or applied associates of science (AAS) degree, which have different levels of difficulty and prerequisites. At some community colleges, the AAS requires an easier math course than the AA degree, which requires an easier one than the AS. Students who performed poorly on the math remedial test (i.e., at the 10th grade level) must take three noncredit math courses before they can take the required math credit course for the AA or AS degree. If the same students seek an AAS degree, they'd need two fewer remedial math courses (only one noncredit math) before taking the required math credit course. Community colleges encourage the AA or AS because they are the customary degrees for transfer, however the AAS does not preclude transfer. More importantly, at community colleges where 75 percent of students drop out with no degree and 90 percent fail to transfer, employment is the more frequent outcome, and employers rarely detect distinctions among those degrees.

Math or English prerequisites are important obstacles for students (Deil-Amen and Rosenbaum, 2002b). While AA students taking several remedial courses face a high risk of dropping out, the same students seeking the AAS degree have fewer noncredit requirements, so they have a better chance of completing a degree, doing so in the two years which most students expect, and getting significant earnings benefits.

Health and technical programs in community colleges sometimes offer job placement assistance in fields that have strong demand and provide strong earnings. Graduates of these occupational programs often have higher earnings than liberal arts graduates with associates of arts degrees (Grubb, 1996). Some health and technical programs have specific math or science requirements that liberal arts programs do not require, but these programs do not necessarily require higher-level courses than liberal arts Associates (AA, not the easier AAS) programs.

Similar issues arise in four-year colleges. Among students planning to get BA degrees, students who enter four-year colleges have a greater chance of obtaining a four-year degree than students who enter two-year colleges (Dougherty, 1994). However, for students who do not complete the BA degree, research raises doubts about the economic value of four-year colleges. "Students who take vocational courses in these institutions seem to do reasonably well, but others might be better off choosing a two-year institution" (Boesel and Fredland, 1999, p. 18). This conclusion is based on evidence about employment outcomes, but the argument is even stronger when costs are considered. Students who attend four-year colleges are more likely to leave with significant debts, and their debts are much larger, regardless of whether they completed the degree (Ibid., p. 19).

Guidelines can provide information about the various colleges and program options and their requirements, completion rates, and job outcomes. Many options now exist, but they are not widely understood. Indeed, in our current research, it took a Ph.D. graduate student several months of reading catalogs and interviewing administrators to figure out the above procedures about the different Associates degrees at a few community colleges. No wonder high school students do not understand what will be expected, and community college students, who have little time to devote to college, frequently make choices that waste their scarce time and money, and then give up in frustration (Deil-Amen and Rosenbaum, 2002b). Merely providing information can help students consider all their options and make productive efforts.

Guidelines Induce Change

If used appropriately, guidelines will not constrain students, they will inform students about their full range of options--broadening the options they consider, informing them of requirements and likely payoffs, and directing their efforts to effective activities. In the process, guidelines can change program enrollments, as students enter colleges offering good chances of degree completion and employment.

Guidelines can also change students' behavior -- showing them incentives for improving their achievement. By failing to give students information, counselors think they are protecting students' self-esteem, but in fact they are withholding information about incentives that would induce them to exert effort in high school, instead of missing that opportunity. Of course, students will learn that they need academic and soft skills after entering college or jobs, but by then, acquiring those skills will be difficult or costly.

Guidelines can also give guidance counselors information. Guidance counselors may not know what skills students need to get college credit courses or good jobs, so they would have the ability to warn students about remedial placements or delayed completion and inform students about promising job opportunities. Counselors not only need to possess this information, they also need the authority to give advice about alternative options. Counselors are not always sure which options are acceptable, and they worry that if they warn students about college difficulties, they will be criticized for having "low expectations" (Rosenbaum, 2001). In contrast, no one complains when guidance counselors now send large numbers of graduates to some community colleges, which have 80-90% dropout rates. In many schools, counseling which encourages high expectations is less criticized than offering realistic options, yet students will ultimately suffer the consequences. Guidelines can authorize counselors to warn about illusory options, about students' misconceptions about the relevance of high school achievement, about alternative desirable job options.

Guidelines can also give counselors information about what college programs have higher chances of completion and what desirable jobs are possible after high school that offer career advancement and tuition benefits. Guidelines can tell counselors under what circumstances they can advise a student to enter a job or a college occupational program. Guidelines can also indicate the requirements for these college programs and jobs, and procedures for obtaining them. Guidelines would improve counselors' practices and would give them authority to provide realistic advice.

Of course, college and work are not exclusive options. Instead of the usual practice of college students taking dead-end jobs solely to earn money, low-achieving students might be encouraged to take career-ladder jobs suggested by teachers while also trying out a few college courses. These students would get benefits from both their college courses and their job experiences.

In addition, both college and good jobs require similar criteria, so students do not have to choose between different kinds of achievement. Efforts to improve high school grades, test scores, attendance, and teachers' ratings of industry and discipline will be valuable in predicting success at college and at jobs.

The federal government can vastly improve the decisions of policymakers, practitioners, parents and students by compiling information about the new rules of college and the labor market. The extensive misconceptions noted above indicate the great need for information.

Provide useful evaluations aligned with college and work requirements

For high-achieving students, the U.S. has a clear procedure for making the transition into highly selective colleges, a procedure that provides student evaluations (either the SAT or ACT) and trustworthy communications channels linking high schools and colleges (high school visits by college recruiters and even some personal contacts). However, for students entering work or entering less selective colleges, the U.S. has not developed an explicit system, and the result is poor alignment of requirements.

Poor alignment is sometimes blatant. Although many states require new "high-stakes tests" to assess students' progress, the tests are often poorly aligned with college and work requirements. Students pass their state exam for "high school competency" and then fail the community college exam for "high school competency" and are placed in remedial classes that give no college credit (Rosenbaum, 2001). Students get a score on a high school test, which says pass or fail, but does not tell them what competencies they have, or what kinds of jobs they can get. This score is not information that students can use to make career decisions. A score that says that

students have solid ninth grade competency in mathematics (that they know fractions, decimals, or logarithms) would be valued by employers and would give students information about their qualifications about appropriate jobs.

The high school diploma is a certificate that implies preparation for society. However, after students graduate from high school, employers are surprised to discover that they lack basic literacy and social skills. "High-stakes tests" are sometimes effective in frightening some students into studying harder (especially if they are near the cut-off point), but they don't give students useful information.

In addition, society and the labor market have other important needs besides academic skills. As the last educational institution that nearly all young people attend, high schools must take on the task of developing students' other capabilities and providing evaluations of them. U.S. schools need to provide useful student evaluations-- tests and ratings that inform employers, colleges, and students about students' strengths and weaknesses on many dimensions.

Tests of competency. Employers' needs for academic achievement are often misstated. Employers need higher skills than many high school graduates possess, but they do not necessarily need college level skills, or even 12th grade skills. Many employers have good jobs that require basic 9th grade skills (Murnane and Levy, 1996). While few jobs require calculus, many jobs require a basic knowledge of fractions, decimals, and simple algebra (Rosenbaum and Binder, 1997). Students need ways to know that they've achieved mastery for job requirements.

Similarly, college-bound students need to know if they qualify for college-credit courses. Community colleges assess this with tests, but students do not get these tests until they get to college. If students took such tests in high school, they could assess their preparation for college and they could focus on improving their achievement to qualify for college-credit courses, rather than focusing on getting into college (which has few requirements).

The right kind of tests. Students take many tests that are used for a wide variety of purposes. Many tests are used to assess schools and teachers. Teachers get upset when they see students sleeping or daydreaming during these tests, which students have no reason to care about. Even high school exit exams affect only a portion of students. These exams assess "minimum competencies," since it is not politically feasible to set the level so high that many students fail. As a result, the many students safely above the pass mark are rarely affected. The skill levels demanded by various state exams vary considerably. While some demand very low skill attainment, others require somewhat higher levels of skill attainment.

Norm referenced tests, which say that a student is at the 40th percentile; convey no meaningful information about whether a student has satisfied the requirements of employers or colleges. In contrast, tests which certify that high school seniors have satisfied 9th, 10th, 11th or 12th grade competencies in math and reading convey meaningful information. They tell employers if students meet their academic skill demands, and tell students what level of jobs or college courses they are qualified to take. Moreover, these tests would pose achievable standards for students to strive to attain. High school seniors would be motivated to attain those standards if they saw clear payoff.

Authoritative tests to assist career choices. While policymakers have focused on the test difficulty, and the ranking of schools and states, the more important point is being ignored -- what information do tests convey to students about their qualifications for jobs or college? Very few tests give useful information to young people. Students do not learn anything about their career possibilities, and they do not get any benefits from a good score.

While students have no reason to care about most test scores (except exit exams where the score isn't meaningful, but the punishment is), students actually need a test that provides authoritative information about realistic career options. For instance, high school seniors need to know whether they are prepared to take college credit courses, or whether college will consign them to remedial courses that give no college credit-- that question determines how long it will take to get a college degree and their likelihood of succeeding. Yet currently there is virtually no way for students to get this information before they enter college. Students need tests that can help them formulate their career plans and assess their career possibilities. We shall propose a way of creating such tests later in this paper.

New ratings. Besides academic skills, employers also need other qualities, which they have difficulty assessing. Employers usually rely on interviews to assess job applicants' work habits and social skills, but interviews are often poor predictors of how applicants will work or get along on a day-to-day basis (Miller and Rosenbaum, 1998). In contrast, research finds that students' behaviors in high school, their attendance, discipline, sociability, and leadership, predict their later earnings (Rosenbaum, 2001, chapter 8). Unfortunately, employers do not realize that high schools could provide information that predicts later job performance, so they do not solicit such information (Miller and Rosenbaum, 1998). As a result, students see no reason to improve their behavior on these soft skills.

In addition to providing grades that signal these soft skills, high schools can provide new evaluations of soft skills (like attendance, discipline, motivation, sociability, and leadership), which predict students' later earnings. Just as some teachers already informally evaluate soft skills for employers who call them, schools could devise new

evaluations so that all students could systematically get valuable signals of their soft skills. Such evaluations would tell employers how students perform, give students incentives to develop these behaviors, and provide low-achieving students with alternative ways to show their capabilities and improve their career outcomes.

After I proposed such ratings in an article, a teacher called me to say that he initiated new employability ratings in his high school. He reported that students who formerly had not exerted effort in high school suddenly saw an incentive to do so, and their behavior improved. These ratings improved student motivation so much that teachers voted to increase their usage of these ratings, despite the extra work required. Employers also found the ratings useful. A few employers initially signed on to using these employability ratings, and increased numbers did so later.

Employability ratings provide new attainable goals, even for students who have great difficulties with academic achievement. These goals do not substitute for academic achievement, but they do provide additional dimensions on which a student can show competency and can qualify for good jobs. For students who have difficulty with academic achievement, employability ratings provide new ways to show qualities that are valued in the labor market.

These ratings may be especially helpful to disadvantaged students. Many disadvantaged students live in areas of concentrated poverty where neighbors don't work or attend college, so it is hard to learn about the demands of colleges and jobs (Wilson, 1996). Ratings can inform students of the kinds of behavior that are expected and give immediate feedback on how they are doing and what they need to do to improve their qualifications. Such ratings may be useful in helping students know what is expected to improve their performance. With such ratings, high schools can provide highly specific information to students about what actions they can take to improve their employability. Of course, these work habits and social skills are also required in college.

Grades. High school grades are a strong predictor of a student's employment success, particularly many years after students enter the labor market (Miller, 1998; Rosenbaum, 2001). Employers do not realize this, so they tend to ignore high school grades when hiring high school graduates. The correlation between high school grades and earnings for noncollege students at age 18 is small, but the correlation is large at age 28. This implies that employers eventually raise their wages as they see that these students are superior employees, but they never think to look back at these employees' high school grades, so they don't use grades in hiring or early job assignments.

Guidelines would encourage employers to make that connection, to examine for themselves how well high school grades predict their own employees' career

advancements. Many employers will discover this relationship for themselves (if their own practices match national patterns), and they will change their hiring practices. Moreover, such guidelines will inform work-bound students about the incentives to improve their grades, and this will lead to better-prepared students. Finally, as students discover the value of grades, teachers will acquire increased authority.

Ironically, while employers often complain about teachers' lack of authority, employers' own hiring practices undermine teachers' authority. If employers change their practices, students will see incentives to get better grades, and teachers will have more authority.

The same is true for college-bound students. Although students who aspire to selective colleges already realize the importance of grades, those who aspire to open admissions colleges often do not. Guidelines will help students to discover the importance of high school effort for achieving their goals.

Reformers have proposed all kinds of innovative curricula for improving the quality of instruction. However, school reforms are useless if students are inattentive or asleep, as is so frequently true today. Reforms will not be effective unless students are motivated, and motivation requires that students see some incentive to pay attention and exert effort. The above reforms can help to accomplish that.

Provide Trusted Communication Channels

Channels that authoritatively inform employers and colleges about students' positive qualities, and authoritatively inform students about college and labor market demands.

It would be nice if all work-bound students had job contacts. Informal personal contacts have always been an effective way to get good jobs. Young people get better jobs by relying on family members who have informal relationships with an employer. While this procedure is unfair because it is not available to everyone, it has a compelling logic. Employers are willing to trust the recommendation of a friend because they trust that the friend would not jeopardize their relationship by recommending an applicant who they knew to be a bad risk. By relying on personal contacts, employers obtain trusted information that they cannot get in other ways, and they are willing to trust young people in good jobs. If high schools had trusted relationships with employers, they could help their students get good jobs.

Some high schools have trusted relationships with colleges. Contrary to the common preconception that elite preparatory schools help their students merely by giving them status advantages, research discovers that they convince selective colleges to admit their students by providing dependable evaluations of students'

positive qualities (Persell and Cookson, 1986). These schools encourage college counselors to form dependable contacts with colleges. These contacts are especially useful to lower achieving students and students from lower social class backgrounds -- students who look less good on paper or in brief interviews. School contacts can show college admissions officers other desirable attributes of students that are not easily apparent (Persell and Cookson, 1986). Since work-bound students tend to have poor academic records, linkages would seem to be especially helpful in getting them jobs.

Since employers have a great need for social skills and work habits, which require evaluations of hard-to-measure qualities that require subjective judgment, trusted linkages can be of enormous value in assuring that these evaluations are trustworthy. These linkages can be especially useful for providing opportunities to disadvantaged students whose strengths are often not reflected on standardized tests and measures, and who do not present themselves well in job interviews. Such student evaluations are more likely to be used if they are conveyed in a trusted relationship.

Teacher job contacts can help work-bound students who don't have personal contacts. Research indicates that trusted school–employer relationships already exist, they are especially used to help disadvantaged students, and they can help put students into jobs with better career trajectories. A study of 110 vocational teachers found that some teachers report that they have trusted relationships with employers, that they take actions to create and maintain these relationships, and that these relationships allow them to place students into good jobs, jobs that offer training and career advancements. Most remarkably, teachers report that these relationships allow them to place disadvantaged students, students with poor academic achievement, limited English proficiency, learning disabilities, or other problems (Rosenbaum & Jones, 1995, 2000). Teachers inform employers about students' limitations, but they also inform employers about students' strengths-- work habits or social skills that might not be apparent in a job application or job interview. For instance, students with learning disabilities who have good attendance, persistence at difficult tasks, attention to quality, and ability to get along with co-workers and supervisors are highly desirable workers, yet none of these qualities are easy to detect in a job interview.

Many vocational teachers enter teaching after having experience in industry. These teachers know employers' needs, and they have friendships with employers, so they can keep informed about employers' needs. Their daily interaction in the classroom gives them a good knowledge of students' strengths and needs. Teachers who have friendships with employers, who seek to preserve those relationships and to recommend students for jobs in future years will not jeopardize their relationship by giving misleading evaluations of their students. Employers recognize that teachers' desire to maintain trusted relationships into the future gives these teachers a continuing credibility.

A study of 51 employers found that some employers report that their relationships with teachers help them make better hiring decisions and provide dependable information and good workers (Rosenbaum & Binder, 1997). These linkages are rare: Nationally about 9% of seniors get jobs through school help (Rosenbaum et al., 1999) and 5% of employers hire from schools (Holzer, 1995). However, high-school job assistance is important, because it provides information that employers cannot get otherwise, and it serves students who have difficulties in the labor market. The task for school reform is to find ways to encourage these relationships and make them more generally available across many teachers in a school.

Of course, by limiting the number of applicants, linkages reduce the number of good applicants. However, larger applicant pools do not improve hiring outcomes if employers cannot assess applicants' quality. Our employers report that advertising generates many applicants, but employers have difficulty selecting among them, and poor decisions often result. In contrast, while linkages generate fewer applicants, they provide more trusted information and better selections. To exaggerate the contrast, if employers end up hiring random students from unlinked schools and the best students from linked schools, they get better quality through linkages. Good information is sometimes more valuable than a large number of applicants.

Additional support might come from chambers of commerce, which can provide valuable information about employers' needs, changes in the mix of industries, job demands and skill demands in local labor markets. However, chambers of commerce have difficulty providing stable institutional support over many years, so they cannot maintain these channels themselves.

Career coordinators can provide further support for such responsiveness. In a study of 12 high schools, two schools had career coordinators. In one school, the career coordinators were active in reaching out to employers and employer groups to identify unmet demands where the high school might provide assistance. Coordinators brought back information to vocational programs, and considered whether the high school could be of service and how to prepare their students. The coordinators' outreach efforts built upon and extended vocational teachers' pre-existing contacts. The vocational teachers were still the main source of contacts, but in new occupational areas, coordinators sometimes became the primary contact. In the other school, the career coordinators played a more passive role, and they became the source of job counseling help for the weakest students (who vocational teachers felt were unprepared) and the worst jobs (jobs in the fast food industry and small retail shops).

Applications to Three Reforms: Tech-Prep, Coop & Reinvigorated Vocational Education

Our policy framework can suggest ways for improving various reforms. Tech-prep, co-op, and "College and Career" programs are three of the most promising reforms. The above policy framework can be applied to improving all three.

Policy Actions for Improving Tech-prep Programs

Tech-prep programs create contacts between high schools and community-college programs in specific occupational fields, such as health care and technology. Tech-prep is a promising approach. It is consistent with economic theory, and even critics of other approaches are impressed with the tech-prep idea (Donahoe & Tienda, 2000). By 1990, there were over 120 tech-prep programs in 33 states, and the Carl Perkins Act included funds to encourage further implementation of this model (Bailey & Merritt, 1993). These programs organize the high-school curriculum in junior and senior years so that it directly meets the prerequisites for certain occupational programs in community colleges and may even provide college credits. Ideally, tech-prep makes a seamless transition between high school and the first course in community college: high-school graduates in these programs are fully prepared to take college courses.

The ideal tech-prep program should reduce some of our concerns about the college-for-all approach of sending unprepared students to college. In tech-prep, mastery of high-school courses should meet the prerequisites for college courses. If students do poorly in a high-school course, they will get clear information about a problem that they must repair before they get to college. Tech-prep programs that synchronize high school and college in very strong linkages will address many of the problems that usually arise with a college-for-all approach.

Unfortunately, many tech-prep programs suffer from the same problems as ordinary high schools. Despite their intentions to make a seamless transition, this doesn't happen. In many tech-prep programs, students enter college unprepared for college-credit courses, high schools do not provide students with clear signals of what colleges demand or how well individuals meet college requirements, and colleges give their own tests because they do not trust high-school evaluations (Orfield and Paul, 1994). These problems indicate how difficult it is to make a seamless transition.

Poor coordination also encourages some students to shop for lax standards. Students can shop for the college that offers the easiest test.

Improving Tech-Prep. Tech-prep provides a good example of the big benefits

that can come from our relatively inexpensive reforms. Tech-prep programs can develop tests that convey signals of students' readiness for college courses. Colleges already give tests to determine whether students will take remedial courses, but various colleges use different tests, and tests are not available to high schools. All community colleges should adopt the same test and make the test available to high schools, so this test would inform high-school students of whether they are prepared for college courses. This improvement is being implemented already. New Jersey community colleges have recently begun to use the same college placement test to determine remedial placements over all community colleges in the state. In addition, some New Jersey high schools are considering using this test to assess students' readiness for college-level courses. Students will take such tests of academic proficiency in any case, after they arrive at college. Taking the tests in high school gives them signals of what actions they should be taking while they are still in high school

Pretests of college readiness would give students incentives for appropriate achievement, and inform them if they are prepared for college-level courses, so they will not be disappointed when they arrive at college. Pretests will help students assess whether college is realistic for them and what they must do to prepare for college courses. Some students will discover achievement deficiencies that they must repair. Unlike the students in our study who had unrealistic plans, New Jersey students who take this test will know in high school whether they will be in college-credit or remedial courses when they get to college. Some students will choose to increase their efforts to make themselves better prepared for college. Other students may realize the uncertainty of their success in higher education; while preparing for college, they will also make multiple plans and get job preparation. Still other students will decide that jobs are better options for them, especially if high school can help them get jobs that lead to career advancement.

Since high school exit exams usually have lower requirements than college remedial exams, many students pass the state test of "high school competency" and fail the community college test of "high school competency." While the two standards won't be identical, the same test could pose two different standards to tell high school students whether they meet each standard. Indeed, subscales in math and reading could give specific useful information. Adapting college remedial tests to include a lower standard for the high school diploma, as well as the standard for college credit, and administering it in high school can go a long way to making the college entrance process more rational, effective, and comprehensible.

Policy Actions for Improving Co-op Programs

Youth apprenticeship and co-op programs create contacts between high schools and employers. They attempt to coordinate learning at school and at jobs.

Both programs try to help students learn academic skills, job skills, and soft skills.

Youth apprenticeships are more structured and usually include close supervision and coursework synchronized with the job experience. Some small-scale experiments are being done in the U.S. (Hamilton and Hurrelmann, 1994; Hamilton and Hamilton, 1999). However, while apprenticeships are extensively used in Germany, they are very expensive, and so few American employers are willing to pay for them. Only a few thousand young people are in youth apprenticeships in the entire U.S. (Lerman and Pouncy, 1990).

Co-op is sometimes viewed as an inexpensive youth apprenticeship. It is widely practiced across most American high schools, with about 8% of American high-school juniors and seniors in co-op programs (General Accounting Office, 1991). Co-op usually consists of releasing students from some classes so they can get experience at jobs, which are supposed to provide more training than average jobs.

In practice, co-op programs have shown two kinds of problems. First, if the jobs are not carefully screened, they may be ordinary jobs in the youth labor market that provide little or no learning (e.g., fast food or small retail).

Second, co-op leads to earnings benefits for students, but only if students take jobs in the same company where they did the co-op program. Research has found that students get no earnings benefit if they take a job in another company (Stern & Stevens, 1992). While students who complete German apprenticeships get a generalized signal of value trusted by all employers (Hamilton, 1990), students who complete a co-op experience do not get such a signal. Co-op programs have problems in providing relevant, trusted signals that are valued by other employers.

Improving Co-op. Just as student evaluations and trusted communication channels could improve other programs, they could also make the co-op experience more effective. If co-op programs provided a widely recognized rating scale to evaluate students' job skills, work habits and social skills, students would get portable credentials to present to other employers.

Informal teacher-employer relationships are probably the most promising way to provide trusted communication channels. As noted, many vocational teachers already have industry experience, have friendships with employers, and they know employers' needs. They also know students' strengths and needs. Employers trust these teachers not to jeopardize their relationship by giving misleading recommendations, so these teachers provide trusted communication channels.

Our proposals can address the two main limitations in co-op programs. If

vocational teachers have trusted relationships with employers, they can detect co-op placements that offer only menial tasks, and they can eliminate them or only use them for their least qualified students. The problem of communicating students' performance from a co-op employer to a hiring employer could be remedied by trusted communication channels between a vocational teacher and the two sets of employers. While the employers might not have contacts with each other, if they both have trusted contacts with the same vocational teacher, that teacher can receive and send trusted information about the students' performance.

Policy Actions for "College and Career" Programs

The world has changed, and students need to acquire greater academic skills in order to get wages that will support families. College will be an option, but less than 42% of high school graduates will attain college degrees, and that proportion is growing very slowly. Fortunately, good jobs are available that do not require college degrees, but they do require solid high school skills.

Over the past decade, reformers have proposed "college and career" programs that provide academic instruction related to occupational themes, and also provide instruction in 21st century occupational areas. Career academies are innovative reforms that try to provide such programs, and many career academies have been set up across the country (Stern, et al., 1992; Kemple, 2001). These programs offer better academics than vocational programs, and they offer more than academics.

These programs also offer social skills and work habits. Although these programs have modified vocational education to provide academic skills and new job skills, one aspect can be preserved. Vocational classes provide opportunities to teach work habits and social skills, which students cannot get in other ways. While employers believe they cannot teach work habits and social skills and academic teachers rarely try, vocational teachers can and do teach them. Expensive equipment is not required. Vocational classrooms can simulate workplaces where students learn to persist at tasks, to solve problems, to work with others, to maintain tools, to resolve conflicts, etc (Rosenbaum and Jones, 2000). Teachers pose exercises that require teamwork, communication skills, writing brief reports, reading technical manuals, and various other skills that employers need. Vocational teachers who have contacts with employers hear employers complain about current workers' persistence, social skills, or problem solving, and they respond by devising tasks to simulate these problems. Many vocational teachers design their classrooms as a form of "quasi-apprenticeship."

Career-related and vocational classes may be especially good places for developing, evaluating, and communicating these student qualities. They involve applied tasks, tasks cumulate toward a finished product, the classroom simulates real

work settings, and students can see that their teachers can evaluate their work readiness, and make recommendations to employers. Even low achieving students who have difficulty in academic classes can discover their capabilities in this setting. Even when academic classes assign applied tasks illustrating a lesson, they pose these as isolated tasks removed from a context where they are essential for some larger goal. "Story problems" are common in mathematics classes, but they do not cumulate into a project or product that has any purpose.

Career-related classes may be especially motivating to low-achieving students who have difficulty in academic classes where they perform poorly. In our interviews, many low-achieving students report that they are unsuccessful, bored, withdrawn and rebellious in nearly all their classes, with only one exception -- their vocational classes (Rosenbaum, 2001). These classes allow students to show other skills than those demanded in academic classes. They also give students a compelling reason to learn and to do high-quality work. When students ask, "Do I have to do that?," one teacher responds, "don't do it for me. But the employers I know who offer good jobs in this field require these skills, and I can't recommend you to those employers if you don't master those skills" Another teacher asks, "Do you... want me to do a recommendation for you based on what you do in this class?" ' Students then understand the importance of class and they respond with greater effort (Rosenbaum, 2001, p. 227).

Unfortunately, policy is now moving in the wrong direction. Schools are reducing vocational education and retiring vocational teachers who have employer contacts. That is a terrible loss. Cutbacks in vocational teachers deprive the entire school of employer contacts, which are especially helpful to students who are unlikely to benefit from college. While school systems are dismantling vocational programs and bragging that they are sending large numbers of students to college, they are not noticing that large numbers of students are taking remedial courses and are dropping out with no college credits and with no preparation for the labor market. On the other hand, one suburban school in our sample ended vocational classes and got rid of all its equipment, and then discovered that students' engagement plummeted. They were sorry to have dismantled these programs, but, by then, the decision could not be reversed.

Vocational programs are already widespread. Policy actions should be taken to reinvigorate vocational programs-- to improve them and to help them better teach social skills and work habits required in the contemporary labor market. These programs should integrate academic skills required by the work world, and they should be made more effective in helping students prepare for and obtain jobs that have career advancement opportunities. Vocational teachers can provide evaluations of social skills and work habits on job-relevant tasks that will motivate low-achieving students. They can also provide trusted communication channels to employers. We already have a substantial infrastructure in place, and we should not let "college for all"

misconceptions prevent us from realizing the value of vocational programs and making them more effective.

Conclusion

As the last societal institution attended by all youths, high schools must prepare all young people for adulthood. If they fail, youths will have difficulty becoming self-sufficient adults. The labor market is often a cruel teacher, and, if youths have bad job experiences, government help comes in the form of job training programs that may stigmatize and hurt their careers worse than if they got no training. While college-educated reformers think that college is necessary to get good jobs, and they often urge that all high school seniors should have the chance to become doctors and lawyers, these are not realistic options for all seniors, and they are not the only good jobs in society.

The real goal should not be the unrealistic vision of everyone being a doctor, but the goal of eliminating the all-too-common outcome of youths facing fast-food jobs and unemployment as their only options. Many other good jobs are available. We interviewed students who reported that vocational education raised their sights to better jobs than they could get on their own, so they could get responsible clerical, technical, or crafts jobs rather than the fast-food jobs most youths get.

While educators worry that career-related education shuts off college options, research indicates that many vocational education students get college degrees, and "college and career" programs may prepare students to do even better. While educators worry about premature career decisions, high school is not too early for students to begin assessing what they've accomplished and their likely career options. For students several years behind grade level, discussing noncollege options does not limit their careers, it helps them become aware of realities and options, so they make informed decisions. Self-assessment may encourage students to improve their efforts and to plan multiple options. After ten years of schooling, low-achieving students who are not exerting any effort in school will not be helped by high schools' encouraging college delusions, which often lead to complacency, lack of effort, and misdirected plans. We propose policies to encourage high schools to provide information, useful student evaluations, and help in attaining multiple options. These policies include college plans, but they also provide a safety net that makes it less likely that students will face dead-end jobs or unemployment.

In stressing these reforms, we do not deny the need for other kinds of reforms. New instructional materials, tutors, and new curriculum standards could better prepare students for their goals.

However, while our proposals may not be sufficient, they are probably necessary prerequisites to effective change. Before any instructional improvement can be taken, the proposed policies can identify discrepancies between students' achievements and plans, alert students and teachers of the need for action, areas of deficiencies, and needed areas of improvement. Most important, they can give students compelling reasons to exert greater efforts, and, later on, they can inform students of their progress, whether their plans are becoming more likely, or whether they should consider other options.

Reform efforts require a prior realization that additional efforts are needed and a willingness to exert such efforts. The college-for-all approach is a form of denial—it creates a complacency that makes additional efforts seem an unnecessary to faculty and students. The first step is to provide information that provides compelling reasons for additional efforts and provides some guidance about what skills are necessary. That is the goal of these proposals.

References

Adelman, Clifford 1985. The New College Course Map and Transcript Files. Washington, DC.: US Dept of Education.

Altonji, Joseph G. and Charles Pierret. 1995. "Employer learning and statistical discrimination." Working Paper, Institute for Policy Research, Northwestern University.

Arum, Richard and Yossi Shavit. 1995. "Secondary vocational education and the transition from school to work." Sociology of Education, 68, 187-204.

Bailey, Thomas and Donna Merritt. 1993. "The school-to-work transition project" New York: MDRC.

Beattie, Irenee. 2001. "Learning 'self-sufficiency': How high school experiences help women avoid welfare." American Sociological Assn. Annual Meetings. Anaheim, CA (August).

Berryman, Susan E. 1992. "Apprenticeship as a paradigm for learning." In James E. Rosenbaum (Ed.), Youth Apprenticeship in America: Guidelines for Building an Effective System, pp. 25-39. Washington, DC: William T. Grant Foundation Commission on Work, Family, and Citizenship.

Bills, David. 1988. "Educational credentials and hiring decisions: What employers look for in entry-level employees." Research in Social Stratification and Mobility, 7:71-97.

Bishop, John. 1993. "Improving job matches in the U.S. labor market." Brookings Papers in Economnic Activity: Microeconomics, ed. by Martin N. Bailey. Washington D C: The Brookings Institution: 335-400.

Bishop, John. 1996 "Signaling the competencies of high school students to employers" in Linking School and Work ed. Lauren B. Resnick and John G. Wirt, San Francisco: Jossey-Bass, pp. 79-124.

Bloom, Howard S., Larry Laurence Orr, George Cave, Sam H. Bell, and Fred Doolittle. 1992. The National JTPA Study: Title II-A Impacts on Earnings and Employment at 18 Months. Bethesda, MD: Abt Associates.

Boesel, David, Lisa Hudson, Sharon Deich, and Charles Masten. 1994. Participation in and Quality of Vocational Education, National Assessment of Vocational Education, Vol. II, U.S. Dept. of Education.

Boesel, David and Eric Fredland. 1999. College for all? : is there too much emphasis on getting a 4-year college degree? Washington, D.C.: National Library of Education, Office of Educational Research and Improvement, U.S. Dept. of Education.

Boesel, David. 2001. "The College Movement And Its Critics". Phi Delta Kappan, 82(7): 537-42.

Cave, George and Fred Doolittle. 1991. Assessing Jobstart: Interim Impacts of a Program for School Dropouts. New York, NY: Manpower Demonstration Research Corporation.

Cicourel, Aaron V. and John I. Kitsuse. 1963. The Educational Decision-Makers. Indianapolis: Bobbs Merrill.

Crain, Robert. 1984. "The quality of American high school graduates: What personnel officers say and do." Center for the Study of Schools, Johns Hopkins University.

Deil-Amen, Regina and James E. Rosenbaum. 2001. "How can low-status colleges help young adults gain access to better jobs? Practitioners' applications of human capital vs. sociological models." Presented to the American Sociological Assn. Los Angeles, August.

___ 2002a. "Community Colleges and Social Reproduction: Social Skills as Cultural Capital." Session on The Sociology of Community Colleges. Annual Meeting of the American Sociological Association, August.

___. 2002b. "The unintended consequences of stigma-free remediation." Sociology of Education. October.

DeLuca, Stefanie Ann and James E. Rosenbaum. 2001. "Individual agency and the life cours do low-SES students get less long-term payoff for their school efforts?" Sociological Focus.

Digest of Educational Statistics. 1991. Washington, D.C.: Gvt. Printing Office.

Digest of Educational Statistics. 1999. Washington, D.C.: Gvt. Printing Office.

Donahoe, Debra and Marta Tienda 2000. "The transition from school to work: Is there a crisis? What can be done?" in Securing the Future, editors Sheldon Danziger and Jane Waldfogel. pp. 231 -- 263. New York: Russell Sage Foundation

Dougherty, Kevin J. 1994. The Contradictory College. Albany NY: SUNY Press.

Farkas, George. 1996. Human Capital or Cultural Capital? New York: Aldine.

Gamoran, Adam. 1994. The impact of academic course work on labor market outcomes for youth who do not attend college: A research review. Washington, D.C.: National Assessment of Vocational Education.

General Accounting Office. 1991. Transition from School to Work. Washington, DC: Author.

Gray, Kenneth 1996 "The baccalaureate game: Is it right for all teens?" Phi Delta Kappan, April, pp. 528-34.

Griffin, Larry J., Arne L. Kalleberg, Karl L. Alexander. 1981. "Determinants of early labor marke entry and attainment: A study of labor market segmentation." Sociology of Education. 54: 206-21.

Grubb, W. Norton. 1996. Working in the Middle. San Francisco: Jossey-Bass.

Hamilton, Stephen F. 1990. Apprenticeship for Adulthood: Preparing Youth for the Future. New York, NY: Free Press.

Hamilton, Stephen F. and Klaus Hurrelmann. 1994. "The school-to-career transition in Germany and the United States." Teachers College Record, 96(2)Winter: 329-344.

Hamilton, Stephen F and Mary Agnes Hamilton 1999. Building strong school to work systems Ithica, New York: Cornell University youth and work program.

Herr, Toby, Suzanne Wagner, and Robert Halpern. 1996. "Making the shoe fit." Project Match Erikson Institue, Chicago. Unpublished paper.

Holzer, Harry. 1995. What Employers Want: Job Prospects for Less-Educated Workers. New York, NY: Russell Sage.

Houghton, Ted and Tony Proscio 2002. Hard work on soft skills. Philadelphia: Public/Private Ventures.

Hughes, Catherine, Thomas Bailey, and Melinda Mechur, 2001, School to Work: Making a difference in education. New York: Institute on education and the economy, teachers college, Columbia University.

Jencks, Christopher, Mary Corcoran, Susan Barltett, James Crouse, David Eaglesfield, Kent McClelland, Peter Mueser, Michael Olneck, Joseph Schwartz, Sherry Ward and Jill Williams. 1979. Who Gets Ahead? New York: Basic Books.

Kang, Suk and John Bishop. 1986. "The effect of curriculum on labor market success." Journ of Industrial Teacher Education, Spring, 133-48.

Kemple, James J. 2001. Career academies: Impacts on students' initial transitions to postsecondary education and employment New York, New York: MDRC.

Krei, Melinda Scott and James E. Rosenbaum. 2001. "Career and College Advice to the Forgotten Half: What Do Counselors and Vocational Teachers Advise?" Teachers College Record, 103(5), 823-43.

Lerman, Robert and Hillard Pouncy. 1990. "The compelling case for youth apprenticeships." Public Interest. 101, 62-77.

Miller, Shazia R. 1998. "Shortcut: High school grades as a signal of human capital." Educational Evaluation and Policy Analysis, 20(4): 299-311.

Miller, Shazia and James E. Rosenbaum. 1997. "Hiring in a Hobbesian World: Social infrastructure and employers' use of information." Work and Occupations, Vol. 24, N.4 November, 498-523.

_____. 1998. "What do grades mean?" (Unpublished paper, Institute for Policy Research, Northwestern University, Evanston IL.).

Moss, Philip and Chris Tilly. 2000. Stories Employers Tell: Race, Skill and Hiring in America. Russell Sage Foundation Press.

Murnane, Richard J. and Levy, Frank. 1996. Teaching the New Basic Skills: Principles for Educating Children to Thrive in a Changing Economy. New York: The Free Press.

Murnane, Richard J., John B. Willett, and Frank Levy. 1995. "The growing importance of cognitive skills in wage determination." Review of Economics and Statistics, Vol.77, N. 2 (May): 251-266.

NCES, 1999. NAEP 1998: Reading Report Card for the Nation and the States. U.S. Department of Education, National Center for Educational Statistics. Washington DC.

NCES, 2000. Vocational education in the United States for the year 2000. U.S. Department of Education, National Center for Educational Statistics. Washington DC.

Oakes, Jeannie. 1985. Keeping Track. New Haven, CT: Yale University Press.

Orfield, Gary and Faith G. Paul. 1994. High Hopes, Long Odds: A Major Report on Hoosier Teens and the American Dream. Indianapolis: The Indiana Youth Institute.

Osterman, Paul. 1980. Getting Started: The Youth Labor Market. Cambridge, MA: MIT Press

Persell, Caroline and Peter Cookson. 1986. Preparing for Power. New York: Basic Books

Rosenbaum, James E. 1976. Making Inequality: The Hidden Curriculum of High School Tracking. New York, NY: Wiley.

____ 1998. "College-for-all: Do students understand what college demands?" Social Psychology of Education, 2(1): 55-80.

____ 2001. Beyond College for All. New York: Russell Sage Foundation.

Rosenbaum, J.E., and Amy Binder. 1997. "Do employers really need more educated youth?" Sociology of Education, 70, 68-85.

Rosenbaum, James E., Stefanie DeLuca, Shazia Miller, and Kevin Roy. 1999. "Pathways into work: short and long-term effects of personal and institutional ties." Sociology of Education, 72(3): 179-96.

Rosenbaum, James E. and Stephanie Jones. 1995. "Creating linkages in the high school-to-work transition: Vocational teachers' networks." in Restructuring Schools: Promises, Practices, and Policies, ed. Maureen Hallinan. New York: Plenum, 235-58.

Rosenbaum, James E., and Stephanie A. Jones. 2000. "Interactions between high schools an labor markets." Handbook of Sociology of Education, editor: Maureen Hallinan. New York: Plenum.

Rosenbaum, James E., Shazia Miller, and Melinda Krei. 1997. "What role should counselors have?" in Advances in Educational Policy (ed. Kenneth K. Wong), Vol 3, Greenwood, Ct. JA Press, 79-92.

Sedlak, Michael W., Christopher W. Wheeler, Diane C. Pullin, and Phillip A. Cusick. 1986. Selling Students Short. New York: Teachers College Press.

Shapiro, Daniel and Maria Iannozzi. 1999. "The benefits to bridging work and school: Results the 1997 National Employer Survey." National Center for Postsecondary Eduation, University of Pennsylvania, Philadelphia, Pa.

Steinberg, Lawrence. 1996. Beyond the Classroom. NYC:Simon and Shuster

Stern, David, Neal Finkelstein, James Stone, John Latting, and Carolyn Dornsife. 1995. Schoo to Work: Research on Programs in the United States Washington and London: Falmer Press

Stern, David, Marylyn Raby and Charles Dayton. 1992. Career Academies: Partnerships for Reconstructing American High Schools. San Francisco, CA: Jossey-Bass.

Stern, David and David Stevens. 1992. "Analysis of unemployment insurance data on the relationship between high school cooperative education and subsequent employment."

Paper prepared for the National Assessment of Vocational Education, Berkeley: University of California: School of Education.

Stinchcombe, Arthur L. 1965. Rebellion in a High School. Chicago: Quadrangle.

Useem, Elizabeth. 1986. Low-Tech Education in a High-Tech World: Corporations and Classrooms in the New Information Society. New York, NY: Free Press.

Wilson, William Julius. 1996. When Work Disappears. New York: Vintage.

Wirt, John G, Lana D. Muraskin, David A. Goodwin, and Robert H. Meyer. 1989. National Assessment of Vocational Education. Washington, D.C.: U.S. Department of Education.